

WHAT IS CLAIMED IS:

1. An optical recording method comprising the steps of:
reading recommended write strategy parameters from an optical recording medium on which the recommended write strategy parameters have been recorded;
determining a write strategy to be used in recording, based on the recommended write strategy parameters that were read and characteristics of the optical system of the optical pickup of the optical recording device used in recording; and
writing to the optical recording medium by use of the optical recording device, using the write strategy thus determined.
2. The optical recording method of claim 1, wherein:
the write strategy is a multiple-pulse type of write strategy; and
the step of determining determines a leading pulse width of the write strategy for recording each mark, based on a ratio of a recommended leading pulse width parameter of the write strategy for recording each mark included in the recommended write strategy parameters with respect to the square of the recommended leading pulse width parameter of the write strategy for recording the shortest mark included in the recommended write strategy parameters.
3. The optical recording method of claim 2, wherein said step of determining is carried out by a computation using a formula predetermined for the optical recording device used in recording.
4. The optical recording method of claim 3, wherein in regard to the write strategy for recording each mark of the

write strategy, the leading pulse width that minimizes reproducing jitter is determined experimentally, a formula is generated such that the experimentally determined leading pulse width is the result of a calculation or a value approximating the result of the calculation, and the generated formula is used in said step of determining.

5. The optical recording method of claim 3 or 4, wherein the formula is expressed as

$$iTF = Ki \cdot (iTP / lTP^2) + Ci$$

(where iTF is the pulse width of the leading pulse in the write strategy to be used in recording an i -th shortest mark,

iTP is the pulse width of the leading pulse in the recommended write strategy parameters for recording the i -th shortest mark,

lTP is the pulse width of the leading pulse in the recommended write strategy parameters for recording the shortest mark, and

Ki and Ci are constants for determining the write strategy to be used to record the i -th shortest mark).

6. The optical recording method of claim 3 or 4, wherein: the reading step reads the recommended wavelength from the optical recording medium; and the formula is expressed as

$$iTF = Ki \cdot (iTP / lTP^2) + Ci + Di \times |\lambda_2 - \lambda_1|$$

(where iTF is the pulse width of the leading pulse in the write strategy to be used in recording an i -th shortest

mark,

iTP is the pulse width of the leading pulse in the recommended write strategy parameters for recording the i -th shortest mark,

$1TP$ is the pulse width of the leading pulse in the recommended write strategy parameters for recording the i -th shortest mark,

λ_2 is the wavelength of a laser beam of the optical recording device used in recording,

λ_1 is a recommended wavelength, and

K_i , C_i , and D_i are constants for determining the write strategy to use to record the i -th shortest mark).

7. The optical recording method of claim 3 or 4, wherein:
the step of reading reads the recommended wavelength from the optical recording medium; and
the formula is expressed as

$iTF = K_i \cdot (iTP/1TP^2) + C_i$, when the value of $|\lambda_2 - \lambda_1|$ is equal to or less than a predetermined value, and

$iTF = K_i \cdot (iTP/1TP^2) + C_i + D_i \times |\lambda_2 - \lambda_1|$, when the value of $|\lambda_2 - \lambda_1|$ is greater than the predetermined value,
(where iTF is the pulse width of the leading pulse in the write strategy to be used in recording an i -th shortest mark,

iTP is the pulse width of the leading pulse in the recommended write strategy parameters for recording the i -th shortest mark,

$1TP$ is the pulse width of the leading pulse in the recommended write strategy parameters for recording the i -th shortest mark,

λ_2 is the wavelength of a laser beam of the optical recording device used in recording,

λ_1 is a recommended wavelength, and

K_i , C_i , and D_i are constants for determining the write

strategy to be used to record the i -th shortest mark).

8. The optical recording method of claim 6 or 7, wherein D_i is the same for every i .

9. The optical recording method of any one of claims 5 to 8, wherein the leading pulse width of the write strategy used in recording a fourth shortest mark is also used in all the write strategies from the write strategy used in recording a fifth shortest mark to the write strategy used in recording a longest mark.

10. The optical recording method of any one of claims 1 to 5, wherein:

the step of reading reads a recommended wavelength value from the optical recording medium; and

the step of determining performs a determination based on the recommended wavelength value and the wavelength of a laser beam of the optical recording device used in recording.

11. The optical recording method of any one of claims 1 to 10, wherein:

the step of recording also reads a recommended asymmetry value;

the method further comprises a step of calculating an asymmetry value for use in recording based on the recommended asymmetry value and the numerical aperture of the objective lens of the optical recording device used in recording; and

the step of writing performs writing by use of the calculated asymmetry value.

12. The optical recording method of claim 11, wherein:
if the recommended asymmetry value recorded on the

optical recording medium is β_1 ,

the numerical aperture of the objective lens used for determining the recommended value is NA1, and

the numerical aperture of the objective lens of the optical recording device used in recording is NA2, then

the asymmetry value β_2 used in recording is calculated by the formula

$$\beta_2 = \beta_1 + E \times (NA2 - NA1).$$

13. An optical recording device with an optical pickup having an optical system for recording and reproducing, comprising:

a reading means for reading recommended write strategy parameters from an optical recording medium on which the recommended write strategy parameters have been recorded;

a determining means for determining a write strategy to be used in recording based on the recommended write strategy parameters that were read and characteristics of the optical system of the optical pickup; and

a writing means for writing to the optical recording medium, using the write strategy thus determined.

14. The optical recording device of claim 13, wherein:

the write strategy is a multi-pulse type of strategy; and

the determining means calculates a leading pulse width of the write strategy for recording each mark, based on a ratio of a recommended leading pulse width parameter of the write strategy for recording each mark included in the recommended write strategy parameters with respect to the square of the recommended leading pulse width parameter of the write strategy for recording the shortest mark included in the recommended write strategy parameters.

15. The optical recording device of claim 14, wherein the determining means carries out a computation using a formula predetermined for the optical recording device used in recording.

16. The optical recording device of claim 15, wherein, in regard to the write strategy for recording each mark of the write strategy, the leading pulse width that minimizes reproducing jitter is determined experimentally, a formula is generated such that the experimentally determined leading pulse width is the result of a calculation or a value approximating the result of the calculation, and the determining means uses the formula to carry out the calculation.